

varies a good deal in the specimens, and the ground colour varies from the dull yellow-red to the rich red-brown form. *Pyrameis cardui* occurs, but rather sparingly. *P. atalanta*, however, is fairly common but not at all variable, one specimen (September 17th, 1905) having the red transverse band almost divided in two, and thus approaching *ab. fracta*, whilst several of the others have this band divided to a less extent. In size the specimens vary from 65mm. (September 16th, 1905) to 55mm. (September 10th, 1905). Of the Satyrids *Epinephele ianira* and *E. tithonus* occur, but I have never taken either in good condition here. *Coenonympha pamphilus* is abundant and variable. In size the specimens vary from 33mm. (July 4th, 1905) to 26mm. (August 30th, 1906). Besides the two aberrations mentioned on page 338 of vol. xvii., of the *Ent. Rec.*, I have taken a few specimens of *ab. ocellata* and one of *ab. obsoleta*. Specimens may also be obtained with dark marginal bands approaching *ab. lyllus*, Esp., and I have a specimen with the underside of the hindwings of a dark red-brown, only varied by a light curved line in the centre, thus approaching *ab. unicolor*.

Butterflies in Eastern Switzerland in 1906.

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Having had several entomological seasons in the Rhone Valley and the Bernese Oberland, we decided that we would, in 1906, go further east. We accordingly made the Engadine our head-quarters. The district is well known to entomologists, and we did not discover much in the way of fresh localities; but the information as to dates, etc., given in the following extracts from our entomological diary, may be of interest.

June 26th.—Between Mühlehorn (on the Walen-See) and the Thalalp-See. *Araschnia lerana* was abundant and in fine condition. We also took six *Parnassius mnemosyne* and two *Brenthis thore* (both ♂s) freshly emerged. ♀s of *Nemeobius lucina* (a finer race than that met with in England) were abundant; the ♂s appeared to be over. Amongst our other captures were *Nisoniades tages* (very large and fine), *Pieris napi* var. ♀ *bryoniae* (worn), and *Euchloë cardamines* (♀s still in good condition).

June 27th.—Weesen Marsh. We took good series of *Lycaena arcas*, *L. euphemus*, and *Coenonympha typhon*. Even within the marsh itself, however, these species were extremely local, and it took some time to discover the right places for them. Of the two blues *L. arcas* was much the rarer; we did not, in either case, meet with many ♀s. Some of the specimens that we took of *C. typhon* were very fine. *Brenthis ino* was another insect common in the marsh, and *Nomiades semiargus* was larger and finer than any we have met elsewhere. We took a single specimen of *Cyclopides palaemon*. The heat was extreme.

June 29th.—The Dischma-Thal, leading from Davos to the Scaletta Pass. Cloudy until mid-day, then heavy rain, followed by intervals of sunshine. There were never many insects flying. We took *Brenthis euphrosyne* (small and dark) and *Pararge hiera* (two ♂s and one ♀), but met with little else of interest.

July 1st to 3rd.—Neighbourhood of Alvanen Bad. We found Alvanen Bad a very good entomological centre, and on July 1st noticed, within half-a-mile of the hotel, nearly fifty different species of butter-

flies. Our most interesting discovery was a wood in which *Brenthis thore* was plentiful, though, unfortunately, the ♂s were rather *passé*. The insect seemed to be a less active flyer than in the neighbourhood of the Walen-See, and it was not unlike *Pararge egeria* var. *egerides* in its habits. Its wings appeared to get chipped and torn very soon, in consequence of its way of fluttering through the branches of the trees and shrubs. We took four *Linnaetis populi* ab. *tremulae*: three of these were in first class condition, the fourth was a poor specimen and we let it go. This insect is not difficult to capture when it comes down from the tops of the trees. It may be interesting to note that two of our captures were made between 10 a.m. and 11 a.m., and the other two between 1 p.m. and 2 p.m. One of the latter was a ♀. Other captures were *Chrysophanus hippothoë* var. *eurybia*, *Lycæna alcon* (1 ♂ and 1 ♀, very large), *Polyommatus bellargus* ab. ♀ *ceronus*, *P. escheri*, *Brenthis ino* (abundant), *Coenonympha iphis* (several ♂s, but only one ♀, all in fresh condition), *Erebia stygæ*, *E. eurypale*, *E. ligea*.

July 4th.—Albula Pass. We walked over the Albula Pass in pelting rain. On our way down some gleams of sunshine enabled us to make a few captures just above Ponte. These included *Hesperia carthami*, *Powellia sao*, *Brenthis ino* (very small), and *Erebia ceto*.

July 5th.—Pontresina. Heavy clouds nearly all day. We took a few blues, asleep on flower-heads, and amongst these was one *Aricia eumedon* ab. *fylygia* in fine condition. In this aberration the white streak on the underside of the hindwings is entirely absent.

July 7th.—Slopes of the Schafberg. Amongst our captures were *Polyommatus orbitulus*, *P. pheretes* (including ab. ♀ *caeruleopunctata*), *Scolitantides baton*, *Parnassius delius*, *Pieris callidice* (as usual a very active and strong flyer), *Melitæa cynthia* (several ♂s, but only one ♀), *M. aurinia* var. *merope* (plentiful), *Oeneis aëlle* (two ♂s), and *Erebia gorge* var. *triopes*. All these species were in fresh condition. Just above Pontresina we took also *Melitæa maturna* var. *wolfensbergeri*, in good condition.

July 9th.—Between the Bernina Hospice and Alp Grum. We took a freshly emerged *Erebia alecto* var. *glacialis* (the only specimen of this species that we met with at all this season), and several *E. gorge* var. *triopes*. We also found *E. gorge* (type). *E. lappona* was abundant, and we took a particularly fine specimen of ab. *caeca*, in which the black dots are entirely absent from the wings. We had not much sun after mid-day; but after the sun had gone in, we took a good many *Melitæa cynthia* and *M. aurinia* var. *merope* at rest and very lethargic. *M. cynthia* lay, with its wings expanded, on low bushes about a foot from the ground.

July 10th.—Roseg-Thal and Alp Surovel. Butterflies very abundant and varied in species. Our most interesting capture was *Melitæa maturna* var. *wolfensbergeri*, which was abundant; the ♀s were in good condition, but the ♂s were getting over. We also took *Lycæna alcon*, *L. arion* var. *obscura*, *Aricia eumedon* (particularly fine), *Polyommatus bellargus* ab. ♀ *ceronus*, *P. pheretes*, *P. optilete*, *Colias phicomone*, *C. palaeno* (fine and fresh), and *Melitæa parthenie* var. *varia*.

July 11th.—On the slopes of the Schafberg. Sunshine at intervals only. We were fortunate in finding the right spot for *Erebia flavofasciata*, and took eleven ♂s and two ♀s, all in first-rate condition; the insect appeared just to have emerged, and the fringes of nearly all

our captures were intact. This insect is so local that there might appear to be some danger of its being exterminated. Fortunately, however, the hillsides over which it flies are so steep that the chase is a difficult one. We made a number of other captures, including *Lycaena alcon* (one ♂), *Polyommatus pheretes* ab. ♀ *caeruleopunctata*, *Oeneis aëlle* (two ♂ s, one ♀), *Erebia mnestra*, and *E. gorge* (both type and var. *triopes*).

July 15th.—Suvretta-Thal (above Campfer). A fine day, following several days of cloud, rain, and snow. Most of our captures were made on the slopes down to the stream, quite near Campfer. We took a good series of *Erebia mnestra* ♂ s, but only two ♀ s. This insect was abundant and very fresh. *Parnassius delius* was also abundant and in fine condition; our series included one ab. *inornata* ♂, and one *albo-privata* ♂. We again took *Polyommatus pheretes* ♀, and, like the two we caught at Pontresina, it was ab. *caeruleopunctata*. Amongst our other captures were *Nomiades semiargus* ab. *caeca*, *Polyommatus orbitulus*, *P. optilete*, and *Plebeius argyrognomon* var. ♀ *brunnea*. *Coenonympha satyrion* var. *unicolor* was common here, as elsewhere in the Engadine.

July 16th.—Woods opposite Campfer. Our most interesting capture was *Brenthis pales* var. *arsilache*. In the swampy ground surrounding a little lake quite close to Campfer, the ♂ s were abundant and very fresh. Apparently the ♀ s were hardly out yet; we took only one specimen. Amongst our other captures were *Parnassius delius* ab. *alboprivata*, *Colias palaeno* ab. ♀ *herrichi* (very fine), *Melitaea matura* var. *wolfenbergeri* (rather worn), *Oeneis aëlle* (one ♂ worn, and two ♀ s), and *Erebia epiphron* var. *nelamus*. The two last named species were taken rather high up, above the Hahnensee.

July 17th.—Cavloccio-Thal (at the top of the Maloja Pass). We took a good series of *Erebia pharte*, the ♂ s of which were abundant in swampy places; the ♀ s appeared to be scarce. *Melitaea matura* var. *wolfenbergeri* was fairly abundant; the ♂ s were in very poor condition, but we took some good ♀ s. Amongst our other captures were *Loweia dorilis* var. *brunnea*, *Lycaena ephemeris* (two ♀ s, smaller and less suffused with black than those we took at Weesen), *Polyommatus optilete*, and a very fine *Erebia tyndarus* ab. *caecodromus*. In this specimen the apical eyes were absent, their place being taken by minute white dots.

July 18th.—Mühlen (on the Julier Pass). There were a fair number of insects about, but there was not much variety, and nearly all that we took were worn and old.

July 19th.—In the Via Mala (near Thusis). We made a few captures, including *Polyommatus hylas*.

July 20th.—The Schyn Pass. *Erebia ligea* was very fresh and fine, as well as abundant; our series showed considerable variation in the number and size of eye-spots. *Polyommatus damon* was exceptionally large. In one place we met with a number of varieties of *Enodia hyperanthus*, including marked examples of ab. *arete* and ab. *caeca*, and we were rather surprised at finding *Limenitis camilla* and *L. sibylla* ♀ s still in fair condition. Amongst our other captures was a magnificent specimen of *Argynnis adippe* ab. *virgata*.

July 23rd.—Neubausen Forest. This would have been a better hunting-ground earlier in the season. *Apatura ilia* var. *clytie* was still flying, but in too poor condition to be worth catching. *Limenitis*

sibylla was also in poor condition, and so was *Pararge achine*. We again met with *Enodia hyperanthus* ab. *arete* and ab. *caeca*, and we succeeded in taking some very fair specimens of *Coenonympha arcania*. *C. iphis* was getting over.

We had a few brilliant days, but on a good many of the days on which we have reported captures there was sunshine only at intervals, and, on some days, the weather was hopelessly bad. On the whole, however, we did better entomologically than in any preceding year, and the majority of the specimens that we brought back were in perfect condition. We can strongly recommend Weesen, Alvaneu Bad, Pontresina, and Campfer as entomological centres. The only English entomologists whom we met were Mr. and Mrs. Travis, but we also made the acquaintance of a German entomologist, Professor Thieme, who visits Pontresina every year, and knows its entomological resources very thoroughly. He maintains that the specimens of *E. flavofasciata* met with at Pontresina are a local race, markedly distinct from the specimens found further east, and he has named them var. *thiemensis*.

VARIATION.

MELANIC AMPHIDASYS BETULARIA.—I observe in *The Entomologist's Record* for October 15th last, p. 250, a notice having reference to melanic specimens of *Amphidasys betularia*—"in the south and south-western counties it is still rare or absent." Again, on p. 251, it says—"Melanism may be affected by heavy rainfall and a damp climate, or the neighbourhood of large towns." During the winter of 1904-5, I obtained three pupæ of *Amphidasys betularia* close to Yorktown, Surrey. This place is close to the junction of Hants, Berks, and Surrey, and as far from any excessive smoke as one could wish for. The climate, too, is very dry. Yet of the three pupæ two came out perfect melanic specimens, quite black; the third was about normal, but well dusted with black spots. These three pupæ were obtained miles from each other. I had no time to breed *A. betularia* larvæ, but from the fact that two out of three pupæ found promiscuously were perfect melanic specimens, I can only surmise that black *betularia* are common in southwest Surrey.—B. TULLOCH (Capt.), Haddon House, Babbacombe Road, Torquay. *January 2nd, 1907.* [Data on melanism should be exact. We do not see how the pupæ were all taken "close to Yorktown," yet "miles from each other."—ED.]

ABERRATIONS OF LEUCANIA FAVICOLOR.—During the past year I obtained some beautiful specimens of an aberration of *Leucania favicolor*. These examples were of a very pale primrose-yellow, and appeared to be intermediate between ab. *lutea*, Tutt, which is deep primrose, and ab. *pallida*, Mathew, which is of a pale wainscot-brown without any trace of yellow. These specimens were bred last July from eggs laid by a female of ab. *lutea* the year before.—G. F. MATHEW, R.N., Dovercourt, Essex. *January 24th, 1907.*

NOTE ON FIDONIA CONSPICUATA AB. FUMATA.—In reference to Mr. G. F. Mathew's remarks on *Fidonia conspicuata* ab. *fumata*, I appear to have half-a-dozen specimens referable to that aberration. These were bred in the spring of 1888 and were of the first brood, being the offspring of parents which were bred in May, 1887. Some of the brood